EE4204 Computer Networks

Socket Programming Assignment Report

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1. Implementation

My code implemented a **UDP-based** client-server socket program for transferring a large message using a hypothetical jumping window protocol. In my code datagrams of size DU are sent in packets of size n before an acknowledgement is sent from the server and that is checked by the client before continuing.

2. Performance Plots

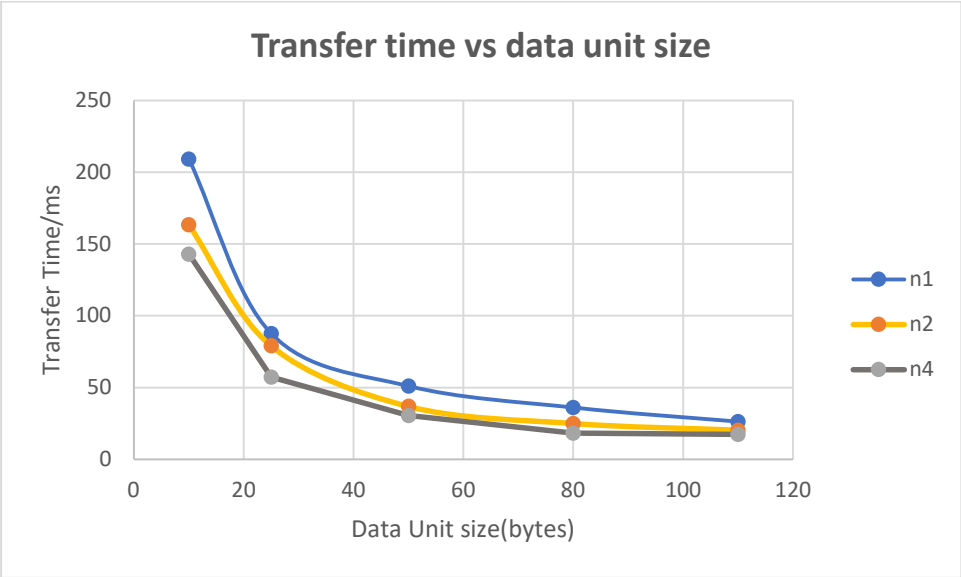
With n sizes of 1,2 and 4. And DUs of size 10,25,50,80 and 110 bytes. I made 5 measurements for each combination of parameters and took the average for transfer time and throughput. The tables can be shown below for the average values for each n:

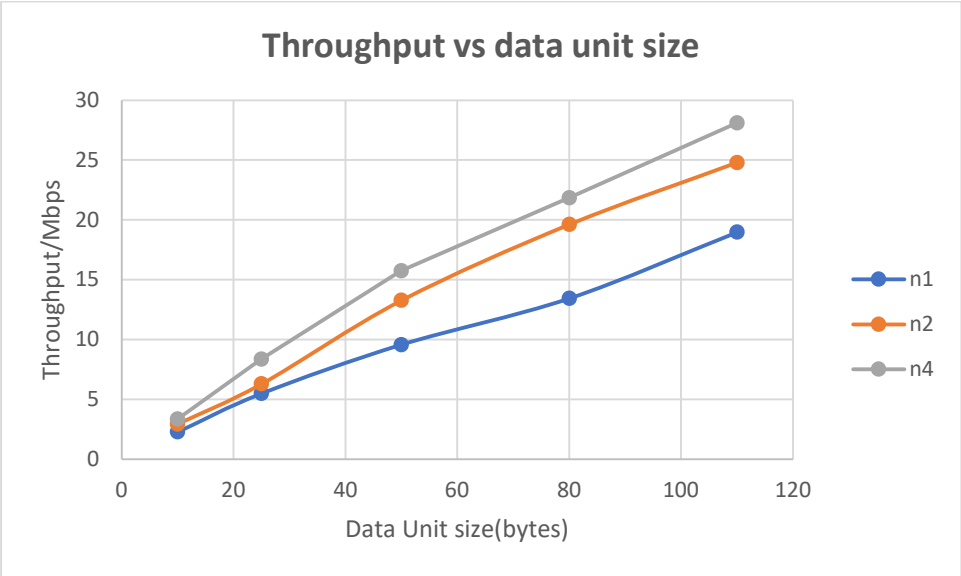
Data Unit size(bytes) w/ n=1	Transfer Time/ms	Throughput/Mbps
10	209.2	2.282
25	87.626	5.494
50	51	9.57
80	36.08	13.44
110	26.3	18.98

Data Unit size(bytes) w/ n=2	Transfer Time/ms	Throughput/Mbps
10	163.4	2.932
25	79.08	6.29
50	36.88	13.28
80	24.94	19.62
110	20.3	24.8

Data Unit size(bytes) w/ n=4	Transfer Time/ms	Throughput/Mbps
10	143	3.366
25	57.2	8.376
50	30.44	15.74
80	18.3	21.86
110	17.42	28.128

Then I plotted a graph of transfer time vs DUs and throughput vs DUs as shown below:





3. Evaluation

As can be seen from the graphs plotted. The transfer time decreased with increasing DU sizes while for increasing values of n the transfer time was also lower. This is expected as there would be less acknowledgments needed for larger DUs and larger values of n i.e packet sizes. Throughput also increased with larger DUs and larger values of n. This is expected as with a lower transfer time means a higher throughput and throughput is message size sent/message transfer time.